JC04 Rec'd PCT/PTO 22 FEB 2001

SUBSTITUTE FORM PTO-1390 U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER
12758-005001

U.S. APPLICATION NO. (If Known, see 37 CFR 1.5)
09/763332

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/DE99/02729	1 September 1999	1 September 1998

TITLE OF INVENTION
METHOD FOR TRANSMITTING VOICE INFORMATION IN A RADIOCOMMUNICATION SYSTEM

APPLICANT(S) FOR DO/EO/US
Egon Schulz and Jurgen Schindler

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).
4. ☒ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☒ is attached hereto (required only if not communicated by the International Bureau).
   b. ☐ has been communicated by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are attached hereto (required only if not communicated by the International Bureau).
   b. ☐ have been communicated by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☐ have not been made and will not be made.
8. ☐ An English language translation of amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 16 below concern other documents or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
    ☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
    ☒ Copy of the International Preliminary Examination Report with annexes
    ☐
    ☐
    ☐
    ☐

CERTIFICATE OF MAILING BY EXPRESS MAIL Express Mail Label No EL 624273172 US

I hereby certify under 37 CFR §1 10 that this correspondence is being deposited with the United States Postal Service as Express Mail Post Office to Addressee with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C 20231

February 22, 01 Samantha Bell Samantha Bell

Date of Deposit Signature Typed Name of Person Signing

U.S. APPLICATION NO. (IF KNOWN)	INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER
09/763332	PCT/DE99/02729	12758-005001

17. ☒ The following fees are submitted:

CALCULATIONS PTO USE ONLY

Basic National Fee (37 CFR 1.492(a)(1)- (5)):

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO **$1000**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO **$860**

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO..... **$710**

International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4)..... **$690**

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4)..... **$100**

ENTER APPROPRIATE BASIC FEE AMOUNT =	$860.00	
Surcharge of **$130** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$0.00	

Claims	Number Filed	Number Extra	Rate		
Total Claims	6 - 20 =		x **$18**	$0.00	
Independent Claims	1 - 3 =		x **$80**	$0.00	
MULTIPLE DEPENDENT CLAIMS(S) (if applicable)			+ **$270**	$0.00	

TOTAL OF ABOVE CALCULATIONS =	$0.00	
☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.	$0.00	
SUBTOTAL =	$0.00	
Processing fee of **$130** for furnishing the English Translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f))	$0.00	
TOTAL NATIONAL FEE =	$0.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00** per property +	$0.00	
TOTAL FEES ENCLOSED =	$860.00	
	Amount to be refunded:	$
	Charged:	$

a. ☒ A check in the amount of $860.00 to cover the above fees is enclosed.
b. ☐ Please charge my Deposit Account No. 06-1050 in the amount of $0.00 to cover the above fees. A duplicate copy of this sheet is enclosed.
c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-1050. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Paul A. Pysher
FISH & RICHARDSON P.C.
225 Franklin Street
Boston, MA 02110-2804
(617) 542-5070 *phone*
(617) 542-8906 *facsimile*

SIGNATURE :

Paul A. Pysher
NAME

40,780
REGISTRATION NUMBER

09/763332
JC02 Rec'd PCT/PTO 22 FEB 2001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Egon Shulz et al. Art Unit : TBD
Serial No. : TBD Examiner : TBD
PCT No. : PCT/DE99/02729
Filed : February 22, 2001
Title : METHOD FOR TRANSMITTING VOICE INFORMATION INA RADIO COMMUNICATION SYSTEM

BOX PCT
Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please amend the above application as follows:

IN THE CLAIMS:

Please cancel original claims 1 to 6 and replace them with new claims 7 to 12, as follows:

- - 7. A method of transmitting voice information in a radio communication system comprised of a base station and mobile stations connected by broadband radio frequency channels that are subdivided into time slots, the method comprising:

transmitting data sequences from the mobile stations to the base station, wherein one of the data sequences is included in a first group of time slots allocated to a first mobile station and one of

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Samantha Bell
Typed or Printed Name of Person Signing Certificate

the data sequences is included in a second group of time slots allocated to different mobile stations other than the first mobile station; and

transmitting a radio block from the base station to the mobile stations, wherein the radio block includes data sequences with a midamble embedded between the data sequences.

8. The method of claim 7, wherein one part of the time slots of a frame is used in a TDD subscriber-separation method on an uplink from the mobile stations to the base station and another part of the time slots is used for a downlink from the base station to the mobile stations.

9. The method of claim 7, further comprising allocating different spread codes to different mobile stations.

10. The method of claim 7, wherein, on an uplink from the mobile stations to the base station, either one long radio block is transmitted by one mobile station for each time slot or two short temporally orthogonal radio blocks are transmitted by two different mobile stations, the one long radio block comprising two data sequences and each short radio block comprising only one data sequence.

11. The method of claim 7, wherein a resource unit comprises bandwidth, a spread code, and a time slot, and wherein between one-half and one resource unit is allocated to a mobile station using hybrid-type allocation for use in transmission between the base station and the mobile stations.

12. The method of claim 11, wherein one time slot with both data sequences is allocated to one mobile station in every third frame of voice information, and one time slot with only one data sequence is allocated in two out of three frames of voice information. - -

REMARKS

Favorable consideration and early passage to issue are respectfully requested.

Respectfully submitted,

Date: February 22, 2001

Paul A. Pysher
Reg. No. 40,780

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

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Page 3 of 4 Serial No. TBD

13 Rec'd PCT/PTO 04 JUN 2001
09/763332

Description

Method for transmitting voice information in a radiocommunication system

The invention relates to a method for transmitting voice information in a radiocommunication system, in particular in mobile radio systems with TDD subscriber separation.

In radiocommunication systems, messages (for example voice, picture information or other data) are transmitted with the aid of electromagnetic waves via a radio interface. The radio interface relates to a connection between a base station and a mobile station, where, instead of mobile stations, fixed radio stations can also be supplied. Electromagnetic waves are emitted at carrier frequencies in the frequency band provided for the relevant system. For future radiocommunication systems, for example the UMTS (Universal Mobile Telecommunication System) or other 3rd-generation systems, frequencies are provided in the frequency band of around 2000 MHz.

Radiocommunication systems with TDD (time division duplex) subscriber separation are known from DE 198 17 771 and DE 198 20 736, which have been optimised for high-speed data services in 3rd-generation mobile radio systems. A consequence of high-speed data services, e.g. for video and multimedia applications, is that broadband channels at 5 MHz and e.g. 8 spread codes per time slot have been selected. This produces a minimum allocable resource unit of around 27.6 kbit/s, which is very large.

A radiocommunication system of this type optimized for high-speed data services is to be improved according to the invention also for the transmission of voice information. To do this, a

method with the features of claim 1 is indicated, which also enables high system capacity for the transmission of voice information. Further developments of the invention can be found in the subclaims.

According to the invention, a radio interface is provided between a base station and a mobile station with broadband channels subdivided into time slots for the transmission of voice information. At least two data sequences are transmitted in one time slot, where, in a first group of time slots, both data sequences are allocated to one mobile station and, in a second group of time slots, both data sequences are allocated to different mobile stations. Finer granularity of the resource units, which were, however, used in DE 198 17 771 for signaling a resource request only, can be obtained by using a plurality of data sequences for each time slot. Hybrid-type allocation of one or two data sequences per time slot to a mobile station results in greater flexibility with respect to the data rate that can be allocated to a mobile station. This means that a large number of voice connections of adequate quality can be supported. This increases the system capacity for voice connections.

The method according to the invention can be used particularly advantageously in applications in which a TDD subscriber separation method and/or, in addition, subscriber separation through allocation of different spread codes to mobile stations of a time slot are used.

Different allocation methods are advantageously used on the uplinks and downlinks. On the one hand, radio blocks with a midamble embedded between the two data sequences are transmitted on the downlink. The data sequences before and after the midamble can therefore be allocated to one

mobile station or to two different mobile stations. On the other hand, either one long radio block is transmitted from one mobile station, or two short, temporally orthogonal radio blocks from two different mobile stations are transmitted, one long radio block representing two data sequences and each short radio block representing only one data sequence. Since no common midamble can be synchronously transmitted in the case of two different transmitters, each of the short radio blocks comprises a midamble and data components. Within the meaning of the invention, the two data components of one short radio block form one data sequence. Channel evaluation and data detection are simplified by means of this data-sequence transmission, which is adapted to the downlinks and uplinks.

In order to support the voice transmission method with a continuous information flow, between one half and one resource unit is allocated in the temporal mean to a mobile station, a resource unit being formed by the bandwidth, one spread code and one time slot per frame. By means of a hybrid-type allocation of one or two data sequences per time slot, definable fractions of one resource unit can also be allocated. The fraction is defined by the rotation of none, one or two data sequences per mobile station and the rotation cycle. A particularly significant fraction is 2/3 of one resource unit, i.e., for example, three mobile stations share two resource units. Thus, one time slot with both data sequences is allocated to one mobile station in every third frame, and one time slot with only one data sequence is allocated in two out of three frames.

Embodiments of the invention are explained with reference to the attached drawings, in which:

FIG 1 shows a block diagram of a mobile radio system,

FIG 2 shows a schematic representation of the frame structure of the TDD transmission method,

FIG 3 shows a schematic representation of a long radio block,

FIG 4 shows a schematic representation of a short radio block,

FIG 5 shows a schematic representation of the transmission on the uplink, and

FIG 6 shows a schematic representation of the transmission on the downlink.

The mobile radio system shown in FIG 1 as an example of a radiocommunication system comprises a multiplicity of mobile switching centers MSC, which are networked with one another or provide access to a fixed network PSTN. Furthermore, these mobile switching centers MSC are connected in each case to at least one device RNM for allocation of radio resources. Each of these devices RNM in turn enables a connection to at least one base station BS. A base station BS of this type can set up a connection via a radio interface to further radio stations, e.g. mobile stations MS or other mobile and fixed terminal devices. At least one radio cell is formed by each base station BS.

FIG 1 shows examples of connections V1, V2, V3 for transmission of user information and signaling information between mobile stations MS and a base station BS. An operation and maintenance center OMC implements monitoring and maintenance functions for the mobile radio system or for parts thereof. The functionality of this structure can be transferred to other radiocommunication systems in which the invention can be used, in particular for subscriber access networks with wireless subscriber connection.

The frame structure of the radio transmission is shown in FIG 2. According to a TDMA component (time division multiple

access), division of a broadband frequency range, for example the bandwidth B = 5 MHz, into a plurality of time slots ts of equal time duration, for example 16 time slots ts0 to ts15, is provided. A frequency band extends over a frequency range B. Some of the time slots ts0 to ts8 are used on the downlink DL and some of the time slots ts9 to ts15 are used on the uplink UL. A switchover point SP lies in between. In this TDD transmission method, the frequency band for the uplink UL corresponds to the frequency band for the downlink DL. The same structure is repeated for further carrier frequencies.

Information relating to a plurality of connections is transmitted in radio blocks within the time slots. The data d are spread individually for each connection with a fine structure, a spread code c, so that, for example, n connections can be separated by this CDMA component at the receiving end. A resource unit, i.e. a physical channel K1, is formed by a frequency band B, a time slot ts and a spread code c. The spreading of individual symbols of the data d causes Q chips of duration T_{chip} to be transmitted within the symbol period T_{sym}. The Q chips form the spread code c for each individual connection.

Within a broadband frequency range B, the consecutive time slots ts are arranged according to a frame structure. Thus, 16 time slots ts are combined to form one frame fr.

The radio interface parameters which are used are preferably as follows:

Chip rate: 4,096 Mcps
Frame period: 10 ms
Number of time slots: 16
Duration of one time slot: 625 µs
Spreading factor: 16
Modulation type: QPSK

Bandwidth: 5 MHz

Frequency re-use value: 1

These parameters enable optimum harmonization with an FDD mode (frequency division duplex) for 3rd-generation mobile radio.

According to the invention, two radio block types are used. According to FIG 3, a long radio block MB, which fills an entire time slot ts, comprises a midamble MA, which is surrounded by two data sequences D1 and D1. Furthermore, a buffer period SP is also included, which serves to compensate for transit time differences.

A short radio block HB is also set up, but this occupies only around half the duration of one time slot ts. A first short radio block HB according to FIG 4 with two data components D1' and D1", which form a first data sequence D1, is transmitted within the time slot in a temporally orthogonal manner in relation to a second short radio block HB with two data components D2' and D2", which form a second data sequence D2. The two short radio blocks HB are transmitted by different stations.

According to the specified parameters of the radio interface, a resource unit is a physical channel K1 with a data rate of 27.6 kbit/s. The number of subscribers with this minimum data rate would furthermore be limited by the number of physical channels. According to the invention, a lower data rate can be set for voice transmission by allocating less than one resource unit in the temporal mean to a mobile station MS. Nevertheless, the continuous data stream is simulated, in contrast to a packet transmission, although the same data rate per frame is not continuously available to a mobile station MS, but rather a varying data rate.

On the uplink UL, radio blocks are transmitted to the base station BS by different mobile stations MS1, MS2, MS3. According to FIG 5, the time slots ts0, ts1 are used for three voice connections of the mobile stations MS1, MS2, MS3. In the first time slot ts0, a long radio block is transmitted in rotation by one of the three mobile stations MS1, MS2, MS3, whereby 1/3 of a resource unit is allocated to each mobile station MS1, MS2, MS3. In the second time slot ts1, two short radio blocks HB are transmitted by the two mobile stations MS1, MS2, MS3 which are not transmitting in the first time slot ts0. A further 1/3 of a resource unit is thus available to the mobile stations MS1, MS2, MS3, distributed by the short radio blocks HB over two frames fr1. The long and short radio blocks MB, HB are spread according to FIG 5 with different spread codes c1, c2. However, this is not a mandatory condition due to the temporal separation according to time slots ts0, ts1.

Part of the voice information is transmitted in each frame fr, thereby minimizing the buffer storage outlay. Both radio block types should not be transmitted simultaneously in one time slot ts in order to minimize the evaluation outlay at the receiving end, in particular in the channel evaluation.

Thus, for example, the first mobile station MS1 uses a long radio block MB and the latter's two data sequences D1, D2 in the first frame fr1, and in each case uses a short radio block HB and therefore the two data components D1' and D1'' of the first sequence D1 in the two following frames fr2, fr3. A data rate of 18.4 kbit/s is thus available to this mobile station MS1.

On the downlink DL according to FIG 6, the base station BS transmits to a plurality of mobile stations MS1, MS2, MS3. Only long radio blocks HB are used, as a result of which it is possible but not

necessary for only one time slot ts0 to be used for the purposes of the rotation with two different spread codes c1, c2.

The base station transmits two data sequences D1 and D2 for the three mobile stations MS1, MS2, MS3 in rotation with the first spread code c1, whereby 1/3 of a resource unit is available in turn in the temporal mean to each of the three mobile stations MS1, MS2, MS3. A second long radio block MB is spread with the second spread code c2 and transmitted, the second mobile station MS2 evaluating the first data sequence D1 and the third mobile station MS3 evaluating the second data sequence D2 in the first frame fr1. A rotation also takes place herein beyond the frames fr1, fr2, fr3 .., whereby a further 1/3 of a resource unit is available to each of the mobile stations MS1, MS2, MS3.

The embodiment has shown how three mobile stations MS1, MS2, MS3 share two resource units. However, it is within the scope of the invention for other fractions also to be set by a corresponding rotation sequence. The rotation can also be carried out if necessary with the same spread code, without using different spread codes c1, c2, by transmitting in different time slots ts0, ts1.

Claims

1. A method for transmitting voice information in a radiocommunication system, in which

a radio interface is provided between a base station (BS) and mobile stations (MS) with broadband channels that are subdivided into time slots (ts) for the transmission of voice information,

at least two data sequences are transmitted in one time slot (ts), both data sequences (D1, D2) being allocated in a first group of time slots (ts1) to a mobile station (MS1), and both data sequences (D1, D2) being allocated in a second group of time slots (ts2) to different mobile stations (MS2, MS3),

and, in both groups of time slots, radio blocks are transmitted on the downlink (DL) with a midamble (MA) embedded between the two data sequences (D1, D2).

2. The method as claimed in claim 1, in which

one part of the time slots (ts) of a frame is used according to a TDD subscriber-separation method for the uplink (UL), and a further part of the time slots (ts) is used for the downlink (DL).

3. The method as claimed in one of the previous claims, in which subscriber separation is additionally carried out by allocating different spread codes (c) to mobile stations (MS) of a time slot (ts).

4. The method as claimed in one of the previous claims, in which, on the uplink (UL) for each time slot (ts), either one long radio block (MB) is transmitted by one mobile station (MS1), or two short, temporally orthogonal radio blocks (HB) are transmitted by two different mobile stations (MS2, MS3), one long radio block (MB) representing two data sequences (D1, D2) and

each short radio block (HB) representing only one data sequence (D1, D2).

5. The method as claimed in one of the previous claims, in which a resource unit is formed by the bandwidth, one spread code and one time slot (ts) per frame and between one half and one resource unit is allocated in the temporal mean to a mobile station (MS) by means of a hybrid-type allocation of one or two data sequences (D1, D2) in one time slot.

6. The method as claimed in claim 5, in which one time slot (ts1) with both data sequences (D1, D2) is allocated to one mobile station (MS) in every third frame, and one time slot (ts2) with only one data sequence (D1, D2) is allocated in two out of three frames.

GR 98 P 2461

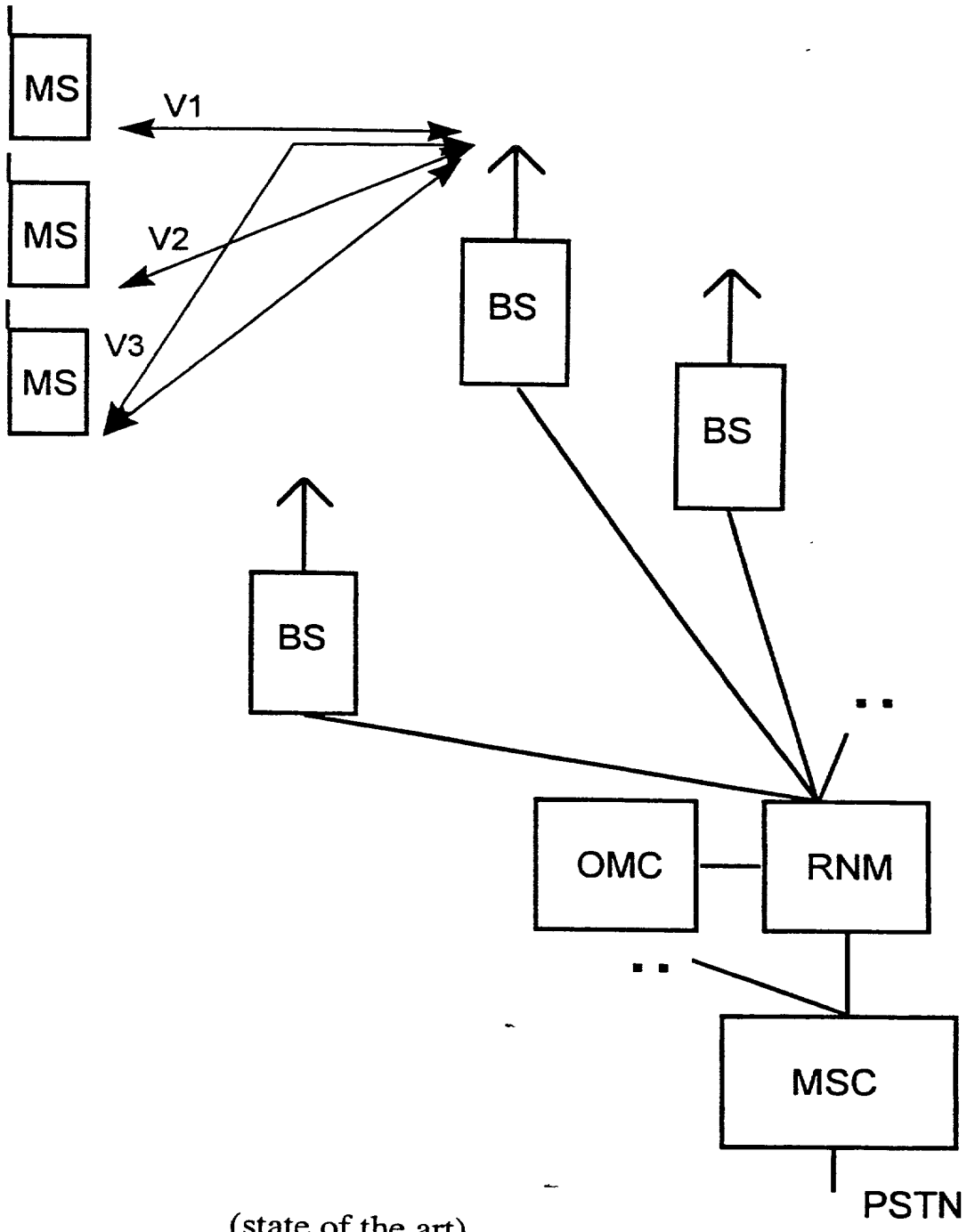
Abstract

Method for transmitting voice information in a radiocommunication system

According to the invention, a radio interface is provided between a base station and a mobile station with broadband channels subdivided into time slots for the transmission of voice information. At least two data sequences are transmitted in one time slot, where, in a first group of time slots, both data sequences are allocated to a mobile station and, in a second group of time slots, both data sequences are allocated to different mobile stations. Finer resource-unit granularity can be obtained by using a plurality of data sequences for each time slot. Hybrid-type allocation of one or two data sequences per time slot to a mobile station results in greater flexibility with respect to the data rate that can be allocated to a mobile station. This means that a large number of spread CDMA subscriber-separation voice connections can be supported in TDD mobile radio systems with broadband channels.

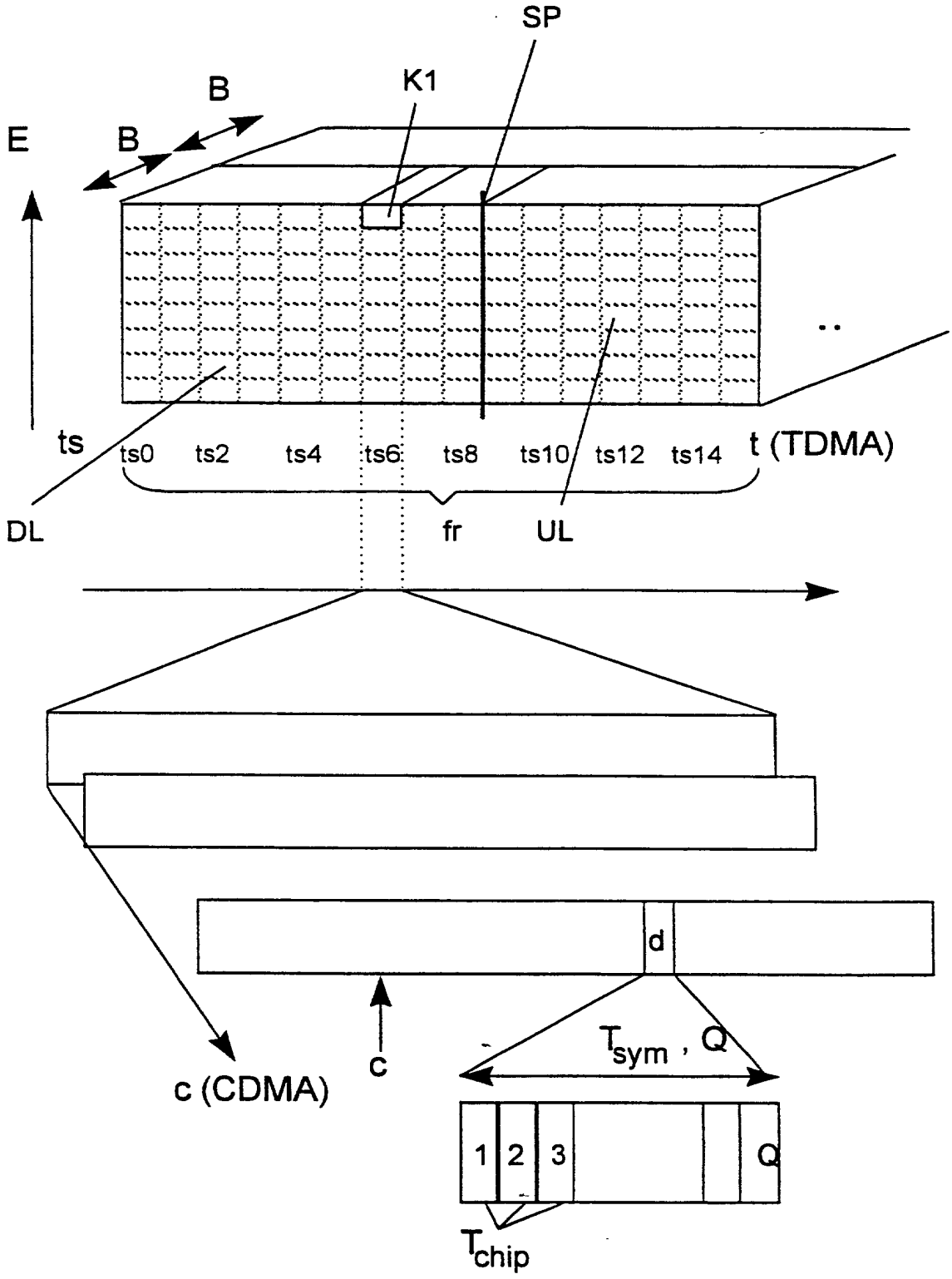
Translation of the PCT

Fig. 1



(state of the art)

Fig. 2


SP
K1
B
B
E
ts
ts0
ts2
ts4
ts6
ts8
ts10
ts12
ts14
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T_{sym} , Q
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2
3
Q
T_{chip}

Fig. 3

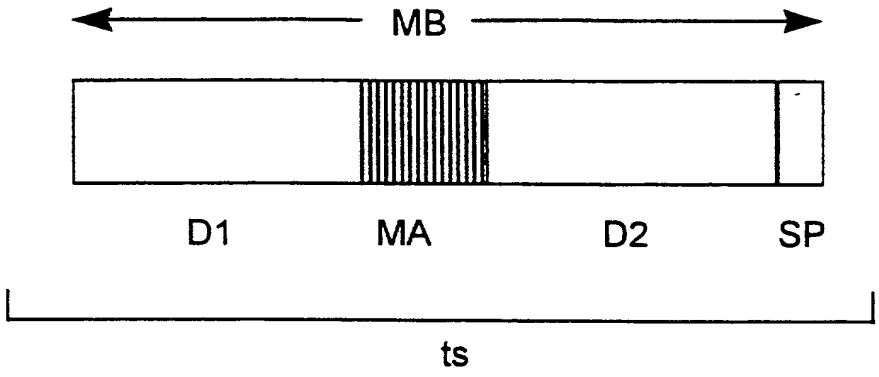


Fig. 4

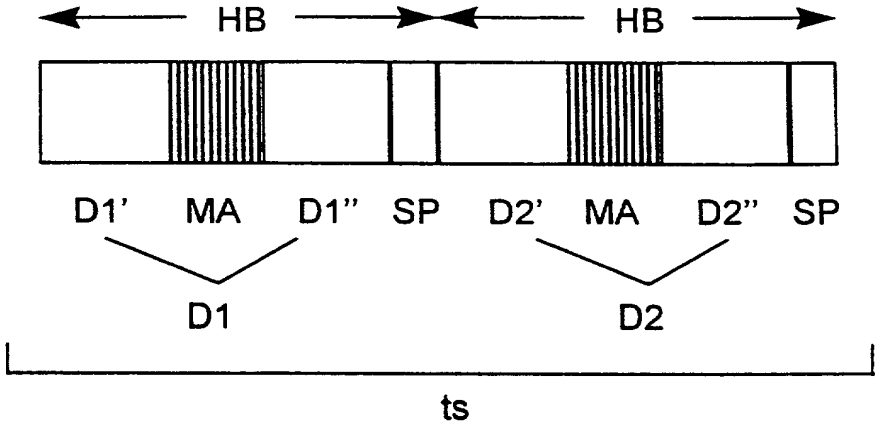
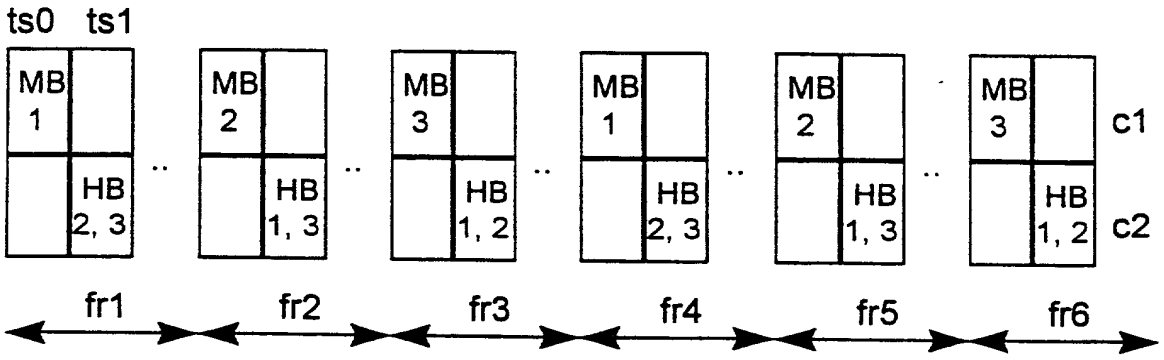
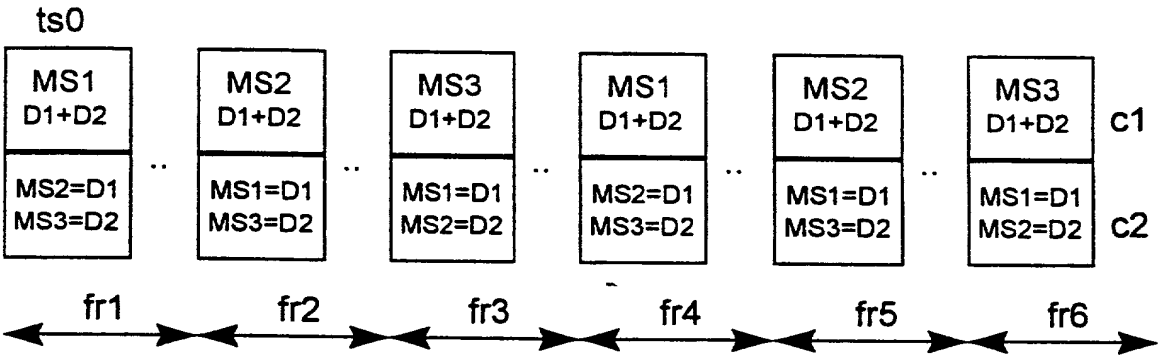


Fig. 5



1 = MS1
2 = MS2
3 = MS3

Fig. 6



Declaration and Power of Attorney For Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Verfahren zur Uebertragung von Sprachinformationen in einem Funk-Kommunikationssystem

deren Beschreibung

(zutreffendes ankreuzen)
☐ hier beigefügt ist.
☒ am 01.09.1999 als
PCT internationale Anmeldung
PCT Anmeldungsnummer PCT/DE99/02729
eingereicht wurde und am _____
abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Method for transmitting voice information in a radiocommunication system

the specification of which

(check one)
☐ is attached hereto.
☒ was filed on 01.09.1999 as
PCT international application
PCT Application No. PCT/DE99/02729
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Translation - PCT/DE99/02729

IDNR: 2590 / V: 99-1.00 / B:Val

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Prior foreign appplications
Priorität beansprucht

			Priority Claimed	
19839805.0 (Number) (Nummer)	DE (Country) (Land)	01.09.1998 (Day Month Year Filed) (Tag Monat Jahr eingereicht)	☒ Yes Ja	☐ No Nein
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	☐ Yes Ja	☐ No Nein
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	☐ Yes Ja	☐ No Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35. United States Code. §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occured between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.) (Anmeldeseriennummer)	(Filing Date D, M, Y) (Anmeldedatum T, M, J)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)
PCT/DE99/02729	01.09.1999		
(Application Serial No.) (Anmeldeseriennummer)	(Filing Date D,M,Y) (Anmeldedatum T, M; J)	(Status) (patentiert, anhängig, aufgeben)	(Status) (patented, pending, abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden koennen, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: *(Name und Registrationsnummer anführen)*

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

And I hereby appoint

Customer No. 26161

Telefongespräche bitte richten an: *(Name und Telefonnummer)*

Direct Telephone Calls to: *(name and telephone number)*

Ext. _____

Postanschrift:

Send Correspondence to:

Fish & Richardson P.C.
225 Franklin Street 02110-2804 Boston, MA
Telephone: (001) 617-542 5070 and Facsimile (001) 617-542 8906
or
Customer No. 26161

Voller Name des einzigen oder ursprünglichen Erfinders:	Full name of sole or first inventor:
Dr. JUERGEN SCHINDLER	Dr. JUERGEN SCHINDLER
Unterschrift des Erfinders / Datum: 15.05.07	Inventor's signature / Date
Wohnsitz: BERLIN, DEUTSCHLAND DEX	Residence: BERLIN, GERMANY
Staatsangehörigkeit: DE	Citizenship: DE
Postanschrift: JAGOWSTR. 42 10555 BERLIN	Post Office Addess: JAGOWSTR. 42 10555 BERLIN
Voller Name des zweiten Miterfinders (falls zutreffend): Dr. EGON SCHULZ	Full name of second joint inventor, if any: Dr. EGON SCHULZ
Unterschrift des Erfinders / Datum: 15/05/07	Second Inventor's signature / Date
Wohnsitz: MUENCHEN, DEUTSCHLAND DEX	Residence: MUENCHEN, GERMANY
Staatsangehörigkeit: DE	Citizenship: DE
Postanschrift: WITTENBERGER STR. 3 80993 MUENCHEN	Post Office Address: WITTENBERGER STR. 3 80993 MUENCHEN

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).